

I claim:

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1. A graphics accelerator for processing a graphical image, the graphics accelerator comprising:  
a texture buffer for storing texture maps and data relating to the texture maps stored in the texture buffer;  
a texture processor that performs texturing operations on the graphical image;  
the texture processor including a fetching engine that retrieves texture packets, each texture packet being stored in the texture buffer and being associated with a texture map, each texture packet including data relating to the location of its associated texture map in the texture buffer.
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2. The graphics accelerator as defined by claim 1 wherein each texture packet is associated with a texture map that is different than the texture maps associated with any other texture packet in the texture buffer.
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3. The graphics accelerator as defined by claim 1 wherein each texture packet includes data relating to the dimensional type of its associated texture map.
4. The graphics accelerator as defined by claim 3 wherein the dimensional type of each texture map is one of a one dimensional texture map, a two dimensional texture map, and a three dimensional texture map.
5. The graphics accelerator as defined by claim 1 wherein the texture processor further includes:  
an input for receiving a texture message indicating that a texture map is to be utilized by the texture processor, the fetching engine responsively retrieving selected texture packets from the
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texture buffer in response to receipt of the texture message.

6. The graphics accelerator as defined by claim 5 wherein the texture processor further includes:

10 a parsing engine for parsing a fetched texture packet and determining information relating to the texture map associated with the fetched texture packet.

7. The graphics accelerator as defined by claim 6 wherein the information relates to the location in the texture buffer of the texture map associated with the fetched texture packet.

8. The graphics accelerator as defined by claim 6 wherein the information relates to the number of dimensions of the texture map associated with the fetched texture packet.

9. A method of applying texture to a graphical image, the method comprising:  
locating a texture packet identifying the location of a texture map in a memory device;  
parsing the texture packet to determine the location of the texture map;  
retrieving, based upon the determined location, the texture map from the memory device;  
and  
applying the texture map to the graphical image.

25 10. The method as defined by claim 9 wherein the texture packet is located by accessing a record identifying the location of the texture packet.

11. The method as defined by claim 9 wherein the memory device is texture memory.

30 12. The method as defined by claim 9 wherein the texture packet is stored in the memory device.

13. The method as defined by claim 9 further comprising:  
reconstructing the texture map after it is retrieved from the memory device.

14. The method as defined by claim 13 wherein the texture packet includes data relating to the dimensional type of the texture map, the texture map being reconstructed by parsing the texture packet to determine the dimensional type of the texture map, the texture map being reconstructed based upon the determined dimensional type of the texture map.

15. A computer program product for use on a computer system for applying texture to a graphical image, the computer program product comprising a computer usable medium having computer readable program code thereon, the computer readable program code including:  
program code for locating a texture packet identifying the location of a texture map in a memory device;  
program code for parsing the texture packet to determine the location of the texture map;  
program code for retrieving, based upon the determined location, the texture map from the memory device; and  
program code for applying the texture map to the graphical image.

16. The computer program product as defined by claim 15 wherein the program code for locating includes program code for accessing a record identifying the location of the texture packet.

17. The computer program product as defined by claim 15 wherein the memory device is texture memory.

18. The computer program product as defined by claim 15 wherein the texture packet is stored in the memory device.

19. The computer program product as defined by claim 15 further comprising:  
program code for reconstructing the texture map after it is retrieved from the memory device.

20. The computer program product as defined by claim 19 wherein the texture packet includes data relating to the dimensional type of the texture map, the program code for reconstructing comprising:

program code for parsing the texture packet to determine the dimensional type of the texture map, the texture map being reconstructed based upon the determined dimensional type of the texture map.

21. A graphics accelerator for processing a graphical image, the graphics accelerator comprising:

a texture buffer for storing texture maps and data relating to the texture maps stored in the texture buffer;

a texture processor that performs texturing operations on the graphical image, the texture processor including a fetching engine that retrieves texture packets, each texture packet being stored in the texture buffer and being associated with a texture map, each texture packet including data relating to the dimensional type of its associated texture map.

22. The graphics accelerator as defined by claim 21 wherein each texture packet includes data relating to the location of its associated texture map in the texture buffer.

23. The graphics accelerator as defined by claim 21 wherein each texture packet is associated with a texture map that is different than the texture maps associated with any other texture packet in the texture buffer.

24. The graphics accelerator as defined by claim 21 wherein the texture processor further includes:

an input for receiving a texture message indicating that a texture map is to be utilized by the texture processor, the fetching engine retrieving selected texture packets from the texture buffer in response to receipt of the texture message.

25. The graphics accelerator as defined by claim 24 wherein the texture processor further includes:

a parsing engine that parses a fetched texture packet and determines information relating to the texture map associated with the fetched texture packet.

26. A method of storing a texture map in linear texture memory of a graphics accelerator, the method comprising:

- A. determining the dimension of the texture map;
- B. converting the texture map to a one dimensional texture map if the dimension of the texture map is determined to be more than one dimensional, the one dimensional texture map having a first number of consecutive data blocks;
- C. locating a second number of consecutive memory locations in the texture memory, the first number being equal to the second number; and
- D. storing the one dimensional texture map in the located memory locations in the texture memory.

27. The method as defined by claim 26 wherein the texture map is two dimensional, step B comprising:

- B1. defining a plurality of data blocks within the texture map; and
- B2. assigning a sequence number to each of the data blocks, the sequence numbers being consecutive numbers.

28. The method as defined by claim 26 wherein step D comprises:

D1. consecutively storing each consecutive data block of the one dimensional texture map in the located memory locations.

29. A graphics accelerator for processing graphical request code, the graphics accelerator comprising:

a linear texture memory for storing texture maps;

a texture processor that applies textures to items to be displayed, the texture processor including a texture map converter that converts texture maps having dimensions greater than one dimensional to a one dimensional texture map, each dimensional texture map having a first number of consecutive data blocks, the texture processor further including means for locating a second number of consecutive memory locations in the texture memory, the first number being equal to the second number; and

means for storing the one dimensional texture map in the located memory locations in the texture memory.

30. The graphics accelerator as defined by claim 29 wherein the texture map converter comprises:

means for defining a plurality of data blocks within the texture map; and

means for assigning a sequence number to each of the data blocks, the sequence numbers being consecutive numbers.

31. The graphics accelerator as defined by claim 29 the storing means comprises:

means for consecutively storing each consecutive data block of the one dimensional texture map in the located memory locations.

32. A computer program product for use on a computer system for storing a texture map in

linear texture memory of a graphics accelerator, the computer program product comprising a computer usable medium having computer readable program code thereon, the computer readable program code including:

program code for determining the dimension of the texture map;

program code for converting the texture map to a one dimensional texture map if the dimension of the texture map is determined to be more than one dimensional, the one dimensional texture map having a first number of consecutive data blocks;

program code for locating a second number of consecutive memory locations in the texture memory, the first number being equal to the second number; and

program code for storing the one dimensional texture map in the located memory locations in the texture memory.

33. The computer program product as defined by claim 32 wherein the texture map is two dimensional, the program code for converting comprising:

program code for defining a plurality of data blocks within the texture map; and

program code for assigning a sequence number to each of the data blocks, the sequence numbers being consecutive numbers.

34. The computer program product as defined by claim 32 wherein the program code for storing comprises:

program code for consecutively storing each consecutive data block of the one dimensional texture map in the located memory locations.

35. A data structure for storing data relating to a texture map, the texture map having an associated dimension and being stored at a given location in a memory device, the apparatus comprising:

a location field identifying the given location in the memory device; and

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a dimension field identifying the dimension of the texture map.

36. The data structure as defined by claim 35 wherein the texture map comprises a set of mipmaps, further wherein the location field includes a plurality of subfields, each subfield identifying the location of one mipmap in the set of mipmaps.

37. The data structure as defined by claim 35 wherein the texture map spans a plurality of addresses in the memory device, the location field identifying the plurality of addresses.

38. The data structure as defined by claim 35 wherein the data structure is stored in the memory device, the memory device being texture memory.